



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/796,008

03/10/2004

Tse-Hao Ko

KO53

4259

1444 7590 10/19/2007
BROWDY AND NEIMARK, P.L.L.C.
624 NINTH STREET, NW
SUITE 300
WASHINGTON, DC 20001-5303

EXAMINER

PIZIALI, ANDREW T

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

10/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/796,008	Applicant(s) KO, TSE-HAO	
	Examiner Andrew T. Piziali	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-19, 21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) 1-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-19, 21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/10/04 & 10/5/07 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 10/5/2007 has been entered.

Claim Objections

2. Claims 16, 17 and 22 are objected to because of the following informalities:

Regarding claim 16, the word “bundles” appears to be missing between “50” and “per.”

Regarding claim 17, the word “bundles” appears to be missing between “40x40” and “per.”

Regarding claim 22, the word “bundles” appears to be missing between “27x24” and “per.”

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 16-19, 21 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Art Unit: 1794

Specifically regarding claim 16, the specification is silent regarding a carbon fabric having the claimed warp and/or weft density. Although Table 2 mentions some warp and weft densities, the table does not specifically mention the claimed range.

Specifically regarding claim 17, the specification is silent regarding a carbon fabric having a fabric density ranging from 15x15 to 40x40 per inch. Although page 4, line 10 mentions a fabric with a density of 27x24, the specification does not specifically mention the claimed range.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 17 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically regarding claim 17, independent claim 16 establishes that the fabric has a fabric density of 20x20 to 50x50 bundles per inch, but dependent claim 17 claims that the fabric may have a lower density of 15x15 bundles per inch. Claim 17 is unclear because the range is not within the range of claim 16.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 16-19, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,950,533 to McCullough in view of USPN 3,914,393 to Ram in view of USPN 4,248,036 to Barron.

McCullough discloses a flame retardant woven, densified carbon fabric filter wherein the carbon fibers have a carbon content of at least 65%, a nitrogen content of from 10 to 20%, and a limiting oxygen index of at least 40 (see entire document including column 2, lines 51-68, column 3, lines 56-6, column 4, lines 14-17 and 51-57, and column 5, lines 22-31).

McCullough does not appear to mention the oxygen content of the carbon fibers, but Ram discloses that it is known in the carbon fiber art to make carbon fibers with an oxygen content of at least about 7% (see entire document including column 3, lines 32-40). Ram also discloses that it is known in the art to carbonize at a temperature high enough to produce graphitic carbon (paragraph bridging columns 3 and 4). It is noted that graphitic carbon has a density of over 1.68 g/ml (about 2.2 g/ml). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the carbon fibers from any suitable carbon fiber material, such as that disclosed by Ram, because the carbon fibers disclosed by Ram are heat resistant and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

Art Unit: 1794

The substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. **KSR**

v. Teleflex

McCullough does not appear to mention the fabric density, but McCullough does disclose that the fabric may be used as a hose covering (column 5, lines 22-31). Barron discloses that it is known in the hose covering art (see entire document including column 1, lines 33-46) to construct a woven fabric with a warp density of 27 to 32 and a weft density of 24 to 32 (see Examples). Barron specifically mentions a 27x24 fabric density (Example 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the fabric in any suitable fabric density, such as a warp density of 27 to 32 and a weft density of 24 to 32, motivated by the expectation of successfully practicing the invention of McCullough and because it is within the general skill of a worker in the art to select a known fabric density on the basis of its suitability and desired characteristics.

Regarding the claimed product-by-process limitation (forming the carbon fabric from oxidized fibers of polypropylene), it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a

Art Unit: 1794

product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

Regarding the claimed wave shielding property, considering that the carbon fabric taught by the applied prior art is substantially identical to the claimed carbon fabric, it appears that the carbon fabric inherently possesses the claimed wave shielding property.

The Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Art Unit: 1794

9. Claims 16-19, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,950,533 to McCullough in view of USPN 4,861,809 to Ogawa in view of USPN 4,248,036 to Barron.

McCullough discloses a flame retardant woven, densified carbon fabric filter wherein the carbon fibers have a carbon content of at least 65%, a nitrogen content of from 10 to 20%, and a limiting oxygen index of at least 40 (see entire document including column 2, lines 51-68, column 3, lines 56-6, column 4, lines 14-17 and 51-57, and column 5, lines 22-31).

McCullough does not appear to mention the oxygen content of the carbon fibers, but Ogawa discloses that it is known in the carbon fiber art to make carbon fibers with an oxygen content of 3 to 10% (see entire document including column 2, lines 47-64). Ogawa also discloses that it is known in the art to use carbon fibers with a density of at least 1.5 g/cm^3 (at least 1.5 g/ml) (column 3, lines 11-29). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the carbon fibers from any suitable carbon fiber material, such as that disclosed by Ogawa, because the carbon fibers disclosed by Ogawa possesses low heat conductivity and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

The substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for

Art Unit: 1794

another known in the field, the combination must do more than yield a predictable result. **KSR**

v. Teleflex

McCullough does not appear to mention the fabric density, but McCullough does disclose that the fabric may be used as a hose covering (column 5, lines 22-31). Barron discloses that it is known in the hose covering art (see entire document including column 1, lines 33-46) to construct a woven fabric with a warp density of 27 to 32 and a weft density of 24 to 32 (see Examples). Barron specifically mentions a 27x24 fabric density (Example 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the fabric in any suitable fabric density, such as a warp density of 27 to 32 and a weft density of 24 to 32, motivated by the expectation of successfully practicing the invention of McCullough and because it is within the general skill of a worker in the art to select a known fabric density on the basis of its suitability and desired characteristics.

Regarding the claimed product-by-process limitation (forming the carbon fabric from oxidized fibers of polypropylene), it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either

Art Unit: 1794

anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

Regarding the claimed wave shielding property, considering that the carbon fabric taught by the applied prior art is substantially identical to the claimed carbon fabric, it appears that the carbon fabric inherently possesses the claimed wave shielding property.

The Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Response to Arguments

10. Applicant's arguments have been considered but are partially moot in view of the new ground(s) of rejection.

In response to applicant's argument that McCullough, Ram and Ogawa are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, McCullough, Ram and Ogawa are each in the field of applicant's endeavor, which is carbon fibers. More specifically, Ram, Ogawa, and applicant's invention relate to the conversion of synthetic material into carbon fibers while both McCullough and applicant's invention relate to carbon fiber fabrics.

The applicant asserts that the applied prior art fails to teach or suggest the claimed fabric because the applied prior art fails to teach or suggest a carbon fabric formed from woven fibers of polypropylene that have been oxidized to carbon. The examiner respectfully disagrees. Regarding the claimed product-by-process limitation (forming the carbon fabric from oxidized fibers of polypropylene), it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to

Art Unit: 1794

show an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

The applicant asserts that the applied prior art fails to teach or suggest the claimed fabric because the applied prior art fails to teach or suggest a carbon fabric having a density of 1.68 g/ml. The examiner respectfully disagrees. McCullough does not appear to mention the oxygen content of the carbon fibers, but Ram discloses that it is known in the carbon fiber art to make carbon fibers with an oxygen content of at least about 7% (see entire document including column 3, lines 32-40). Ram also discloses that it is known in the art to carbonize at a temperature high enough to produce graphitic carbon (paragraph bridging columns 3 and 4). It is noted that graphitic carbon has a density of over 1.68 g/ml (about 2.2 g/ml). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the carbon fibers from any suitable carbon fiber material, such as that disclosed by Ram, because the carbon fibers disclosed by Ram are heat resistant and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

The applicant asserts that the applied prior art fails to teach or suggest the claimed fabric because the applied prior art fails to teach or suggest the claimed magnetic wave shielding efficiency. The examiner respectfully disagrees. Regarding the claimed wave shielding

property, considering that the carbon fabric taught by the applied prior art is substantially identical to the claimed carbon fabric, it appears that the carbon fabric inherently possesses the claimed wave shielding property.

The applicant asserts that there are structural differences between the claimed carbon fabric and the carbon fabric taught by the applied prior art, but applicant's argument is without merit because the applicant fails to mention specific structural differences or show that the structural differences are necessarily present.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew T Piziali/
Primary Examiner, Art Unit 1794